

WHAT IS CLAIMED IS:

1. A vaporizing device for CVD source materials comprising a vaporizer for vaporizing introduced CVD source materials through heating, a spray nozzle of which end portion is fixedly attached to the vaporizer for spraying the CVD source materials into the vaporizer, a cooling mechanism for cooling the spray nozzle, and a heat conduction restricting means attached either to the fixing portion, or to proximate of the fixing portion of the spray nozzle or the vaporizer.

2. The vaporizing device for CVD source materials of Claim 1, wherein the device further includes a heat insulating mechanism for thermally insulating the vaporizer from the cooled spray nozzle.

3. The vaporizing device for CVD source materials of Claim 2, wherein the heat conduction restricting means is configured to assume a wall thickness which is smaller than a wall thickness of the vaporizer or the spray nozzle disposed in the periphery of the heat conduction restricting means.

4. The vaporizing device for CVD source materials of Claim 3, wherein the heat conduction restricting means is formed of a metallic plate of which thickness is smaller than the wall thickness of the vaporizer.

5. The vaporizing device for CVD source materials of Claim 4, wherein at least a part of a wall surface of the metallic plate of a small

thickness is covered by glass, ceramics or heat-resisting plastics.

6. The vaporizing device for CVD source materials of Claim 2,  
wherein the spray nozzle is a nozzle which is configured to make gas  
5 containing the CVD source materials and spray gas for spraying the CVD  
source materials flow in a separate manner.

7. The vaporizing device for CVD source materials of Claim 6,  
wherein the spray nozzle is formed as a coaxial double tube structure  
10 composed of an inner tube and an outer tube, and wherein gas  
containing the CVD source materials is made to flow through one of the  
tubes and spray gas for spraying the CVD source materials is made to  
flow through the other one of the tubes.

8. The vaporizing device for CVD source materials of Claim 7,  
15 wherein the coaxial double tube is made of metal, resin or a complex of  
these.

9. The vaporizing device for CVD source materials of Claim 8,  
20 wherein either a tip end portion of an inner tube and/or outer tube of the  
coaxial double tube or the tube through which the CVD source material  
is made to flow is formed of resin.

10. The vaporizing device for CVD source materials of Claim 8,  
25 wherein the outer tube of the coaxial double tube is formed of metal.

11. The vaporizing device for CVD source materials of Claim 2,

wherein a surface of an inner wall of the spray nozzle or the vaporizer is provided with a coating film of nickel, chrome or an oxide thereof; a coating film of an alloy including as main components nickel or chrome, or an oxide thereof; a coating film of heat-resisting resin; a coating film of holohyaline; or a coating film of ceramics.

12. A vaporizing device for CVD source materials comprising a vaporizer for vaporizing introduced CVD source materials through heating and a spray nozzle for spraying the CVD source materials into the vaporizer, wherein a surface of an inner wall of the spray nozzle or the vaporizer is provided with a coating film of nickel, chrome or an oxide thereof; a coating film of an alloy including as main components nickel or chrome, or an oxide thereof; a coating film of heat-resisting resin; a coating film of holohyaline, or a coating film of ceramics.

13. A CVD apparatus comprising:  
a vaporizing device for CVD source materials comprising a vaporizer for vaporizing introduced CVD source materials through heating, a spray nozzle of which end portion is fixedly attached to the vaporizer for spraying the CVD source materials into the vaporizer, a cooling mechanism for cooling the spray nozzle, and a heat conduction restricting means attached either to the fixing portion, or to proximate of the fixing portion of the spray nozzle or the vaporizer, and a heat insulating mechanism for thermally insulating the vaporizer from the cooled spray nozzle;  
a supply portion for supplying the CVD source materials into the vaporizing device for CVD source materials; and

a reacting portion for forming a film on a substrate through reaction of the source materials which have been vaporized by the vaporizing device for CVD source materials.

# APPENDIX